AF
2100
CC

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gary S. Huff
Serial No: 09/915,743
Filing Date: July 26, 2001
Examiner: Daniel J. Ryman
Art Group: 2642
Docket No: BP1518
Title: METHOD AND APPARATUS FOR PERFORMING WIRE SPEED AUTO-NEGOTIATION

Date: 8/25/03

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

TRANSMITTAL OF APPELLANT'S BRIEF PURSUANT TO 37 C.F.R. § 1.192

In accordance with a Notice of Appeal filed on June 25, 2003, the applicant hereby submits:

1. Appellant's Brief (in triplicate);
2. Credit Card Payment form in the amount of $320 for filing of a brief in support of an appeal; and
3. Transmittal Postcard.

RESPECTFULLY SUBMITTED,

By: _____

Bruce E. Garlick
Registration No. 36,520
Garlick, Harrison & Markison, LLP
P.O. Box 160727
Austin, Texas 78716-0727
Phone: (512) 264-8816
Fax No. (512) 264-3735

CERTIFICATE OF MAILING
37 C.F.R 1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:

August 25, 2003
Date

_____
Signature

16
9-9-03
mg

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant: Gary S. Huff
Serial No: 09/915,743
Filing Date: July 26, 2001
Examiner: Daniel J. Ryman
Art Group: 2642
Docket No: BP1518
Title: METHOD AND APPARATUS FOR PERFORMING WIRE SPEED AUTO-NEGOTIATION

Date: 8/25/03

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANT'S BRIEF PURSUANT TO 37 C.F.R. § 1.192

In accordance with a Notice of Appeal filed on June 25, 2003, the applicant submits this appellant's brief.

1. Fee: Enclosed herewith is a credit card payment form for the fee of $320 for filing of a brief in support of an appeal.

2. Real Party in Interest: All rights to the above referenced patent application have been assigned to:

Broadcom Corporation
16215 Alton Parkway
Irvine, California 92618-7013

3. Related Appeals and Interferences: There are no known other appeals or interferences that would directly or indirectly affect the Board's decision in the present appeal.

4. Status of the Claims: Claims 1-5, 21-22, and 30-140 are pending.

Claims 1, 3, 21, 22, 30-33, 38-41, 63-66, 70-74, 81-84, 87, 88, 90, 94, 96-99, 104-108, 129, 131, 135, and 137 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333).

Claims 2, 34, 35, 43, 44, 46, 67, 68, 76, 77, 79, 85, 86, 91, 92, 100, 101, 109, 110, 112, 130, and 136 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) as applied to claims 1, 30, 63, 81, 96 above, and in further view of Mills (USPN 5,991,303).

Claims 4 and 5 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) as applied to claim 1 above and in further view of Wakeley et al (USPN 6,198,727).

Claims 36, 37, 69, 102, and 103 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) as applied to claims 30, 63, 96 above, and further in view of IEEE 802.3u-1995.

Claims 42, 75, 89, and 95 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) as applied to claims 30, 63, and 81 above, and further in view of Crayford (USPN 5,432,775).

Claims 45, 47, 78, 80, 93, 111, and 113 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) and in further view of Mills (USPN 5,991,303) as applied to claims 43, 76, 91, 109 above, and further in view of Crayford (USPN 5,432,775).

Claims 48-51, 54, 55, 57, 61, 114-117, 120, 121, 123, 127, 132, 134, 138, and 140 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) in further in view of IEEE 802.3u-1995.

Claims 52, 53, 58, 59, 118, 119, 124, 125, 133, and 139 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) in further in view of IEEE 802.3u-1995 as applied to claims 48 and 114 and further in view of Mills (USPN 5,991,303).

Claims 56, 62, 122, and 128 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) in further in view of IEEE 802.3u-1995 as applied to claims 48 and 114 and further in view of Crayford (USPN 5,432,775).

Claims 60 and 126 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) in further in view of IEEE 802.3u-1995 as applied to claims 58 and 124 and further in view of Crayford (USPN 5,432,775).

5. Statement of Amendments: A Final Office Action was mailed on March 5, 2003. A Response after Final was filed on April 22, 2003. In an Advisory Action mailed May 20, 2003, the Examiner advised Applicant that the Response After Final was not entered.

6. Summary of the Invention:

Generally, a method according to the present invention establishes a link between a first network device and a second network device. The first network device transmits a first message advertising a first set of capabilities to a second network device. The first network device negotiates with the second network device to determine a first link speed based upon the first set of capabilities. The first network device attempts to establish a link at the first link speed with the second network device. The first network device fails to establish a link at the first link speed with the second network device. The first network device then downgrades the first set of capabilities to a second set of capabilities, wherein the second set of capabilities does not include the first link speed. The first network device negotiates with the second network device to determine a second link speed that is less than the first link speed. The first network device and the second network device establish a link at the second link speed. The first network device transmits data to the second network device via the link at the second link speed.

Other embodiments of the present invention include semiconductor components and wired Ethernet communication systems that operate substantially in accordance with the above methodology.

7. Issue: The applicant contends that claims 1, 3, 21, 22, 30-33, 38-41, 63-66, 70-74, 81-84, 87, 88, 90, 94, 96-99, 104-108, 129, 131, 135, and 137 are not rendered obvious under 35 U.S.C. 103(a) by Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333). The applicant contents that none other of the pending claims are

rendered obvious under 35 U.S.C. 103(a) as being unpatentable over Feuerstraeter et al. (USPN 6,285,659) in view of Cochennec (USPN 4,417,333) and/or in combination with any other of the cited references.

8. Grouping of the Claims:

Claims 1-5, 21-22, and 30-140 (all pending claims) may be grouped for argument with respect to all 35 U.S.C. §103(a) rejections.

9. Argument:

In attempting to establish a link across a servicing media, both prior art Local Area Network (LAN) link partners and LAN link partners of the present invention first perform auto negotiation. Auto negotiation causes the LAN link partners to select a highest commonly supported data rate. With auto negotiation complete, the LAN link partners attempt to establish a link at the highest commonly supported data rate. In an IEEE 803.2 Ethernet system, auto negotiation is performed at 10 Mega-Bits-Per-Second (MBPS) while the high commonly supported data rates are currently 100 MBPS and/or 1 Giga-Bits-Per-Second (GBPS) and will soon be 10 GBPS and higher. Thus, a servicing media that supports auto negotiation at 10 MBPS may not support a link at the highest commonly supported data rate. When prior art LAN link partners could not establish a link at the highest commonly supported data rate (due to media problems, for example) they re-entered auto negotiation. In again performing auto negotiation, the prior art LAN link partners again selected the highest commonly supported data rate. The prior art LAN link partners thus endlessly alternated between selecting the highest commonly supported data rate in auto negotiation and failing to establish a link at the highest commonly supported data rate. Manual intervention was required to overcome this problem of the prior art LAN link partners.

Claim 1 requires: (a) a first network device transmitting a first message advertising a first set of capabilities to a second network device, (b) the first network device negotiating with the second network device to determine a first link speed based upon the first set of capabilities, (c) the first network device *attempting to establish a link at the first link speed with the second network device*, (d) the first network device **failing**

to establish a link at the first link speed with the second network device, (e) the first network device *downgrading the first set of capabilities to a second set of capabilities, wherein the second set of capabilities does not include the first link speed*, (f) the first network device transmitting a second message advertising the second set of capabilities to the second network device, (g) the first network device *negotiating with the second network device to determine a second link speed that is less than the first link speed*; (h) the first network device and the second network device *establishing a link to at the second link speed*; and (i) the first network device transmitting data to the second network device via the link at the second link speed.

The operations required by elements (c), (d), (e), (g), and (h) of claim 1 (as referenced above) are neither disclosed nor suggested by the prior art of record. In rejecting claim 1, the Examiner asserts that ***establishing*** a communication link at a first link speed ***that may or may not introduce errors*** into a ***serviced data communication*** as taught by Feuerstraeter and/or Cochennec is equivalent to (and discloses) *FAILING TO ESTABLISH* a communication link at the first link speed as required by element (d) of claim 1. This assertion is simply incorrect.

At col. 6, lines 56 - col. 7, line 2, Feuerstraeter discloses **transmitting data** between a repeater hub 40 and computer 28 using 100Base communication protocol, the **data becoming corrupted** by the type 3 cable link 38. The devices **detect the errors from the computed data**, automatically disconnect the link to renegotiate a lower rate communication protocol, and operate accordingly. At col. 8, lines 24-55, Feuerstraeter discloses **monitoring transmitted and received data** for errors. Error detection logic determines when the number of errors received or transmitted exceeds a threshold, which indicates that the communication link is probably the cause of the errors. At col. 9, lines 13-39, Feuerstraeter discloses negotiating a highest rate, establishing a link at the highest rate, and performing **error detection** as described above.

As these citations demonstrate, Feuerstraeter discloses **establishing a communication link** at a first link speed that may or may not introduce errors into a serviced data communication. Feuerstraeter further teaches that **data being transmitted** and received over the established communication link operating at the first link speed **is monitored to detect errors in the data**. If the number of data errors (or data error rate)

is too great, the devices automatically disconnect the link, renegotiate a lower link speed, and establish a new link at the lower link speed.

In contrast, the method of claim 1 includes, in part, **attempting to establish a link** at the first link speed, **failing to establish the link** at the first link speed, and renegotiating a slower link speed. As such, if a link establishment failure occurs, data is never transmitted at the first link speed and the devices negotiate a slower link speed. Thus, the teachings of Feuerstraeter, which teach that a link be established to support data communications at a first link speed, monitoring the data communications for errors, and if the errors exceeds a threshold, terminate the link and establish another link at a slower link speed does not anticipate, or suggest, that if a link establishment failure occurs, data is never transmitted at the first link speed and the devices negotiate a slower link speed as is claimed in claim 1.

At page 3, lines 7-10 of the Action, the Examiner seems to concede the shortcomings of Feuerstraeter when he states that, "Feuerstraeter possibly does not expressly state that the failure to establish a link capable of supporting communications constitutes a failure to establish a link at the first link speed." Having identified the shortcomings of Feuerstraeter, the Examiner cites Cochennec at col. 5, lines 18-22 which states, "[t]he transmitter-receiver apparatus 33i has conventional circuits capable of detecting a failure in the high bit rate link HBRLi, this failure may be the absence of the clock, an excessive error rate, a loss of locking, etc." The Examiner then states "[i]t is obvious that Cochennec makes this distinction because a link that has a large number of errors cannot communicate information properly and so is useless to the communication system. It would have been obvious to one of ordinary skill in the art of communication systems to consider failing to establish a link on which communication can occur as failing to establish a link because a communication link is useless and so should be considered a failure, unless it can communicate information properly."

Cochennec at col. 5, lines 18-22 describes how a failure of a high bit rate link may be detected but does not disclose that *failing to establish a link* is the same as *establishing a link* that may or may not introduce errors into a serviced data communication. The Examiner argues that establishing a link that introduces errors into a serviced data communication (coined "a useless link" by the Examiner) is the same thing as being

unable to establish a link. This is incorrect. If a link is established it services a data communication. If a link is not established it **CANNOT** support a data communication.

The Examiner has incorrectly characterized Feuerstraeter et al. and Cochennec and, resultantly, has erroneously rejected the pending claims. As such, the Appellant respectfully requests that the foregoing rejections be overturned and that the claims in the present application be allowed to issue.

RESPECTFULLY SUBMITTED,

By: _____

Bruce E. Garlick
Registration No. 36,520
Phone: (512) 264-8816
Fax No. (512) 264-3735

CERTIFICATE OF MAILING
37 C.F.R 1.8

I hereby certify that this correspondence is being deposited with the U.S. Postal Service with sufficient postage as First Class Mail in an envelope addressed to: Mail Stop Appeal Brief - Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450, on the date below:

August 25, 2003
Date

_____
Signature

Copy of Claims

1. (Amended) A method for establishing a link between network devices comprising the steps of:

a first network device transmitting a first message advertising a first set of capabilities to a second network device;

the first network device negotiating with the second network device to determine a first link speed based upon the first set of capabilities;

the first network device attempting to establish a link at the first link speed with the second network device;

the first network device failing to establish a link at the first link speed with the second network device;

the first network device downgrading the first set of capabilities to a second set of capabilities, wherein the second set of capabilities does not include the first link speed;

the first network device transmitting a second message advertising the second set of capabilities to the second network device;

the first network device negotiating with the second network device to determine a second link speed that is less than the first link speed;

the first network device and the second network device establishing a link at the second link speed; and

the first network device transmitting data to the second network device via the link at the second link speed.

2. The method of claim 1, wherein the first set of capabilities includes 1000 BASE-T operations.

3. The method of claim 1, wherein the first set of capabilities includes 100 BASE-T operations.

4. The method of claim 1, wherein the first set of capabilities includes full-duplex operations.

5. The method of claim 1, wherein the first set of capabilities includes half-duplex operations.

21. (Amended) A method for operating a pair of local area network devices to establish a link, the method comprising:

the pair of local area network devices determining a set of commonly supported operating parameters by performing auto negotiation operations, the commonly supported operating parameters including a first link speed;

the pair of local area network devices attempting to establish a link according to the set of commonly supported operating parameters; and

when the attempt to establish the link according to the set of commonly supported operating parameters fails:

the pair of local area network devices auto negotiating to determine a reduced set of commonly supported operating parameters, the reduced set of commonly supported operating parameters including a second link speed that is less than the first link speed;

the pair of local area network devices establishing a link according to the reduced set of commonly supported operating parameters at the second link speed; and

the pair of local area network devices exchanging data at the second link speed.

22. (Amended) A method for operating a pair of local area network devices to establish a link, the method comprising:

a first local area network device of the pair of local area network devices advertising a first local area network device set of supported operating parameters;

a second local area network device of the pair of local area network devices advertising a second local area network device set of supported operating parameters;

the first local area network device and the second local area network device negotiating a set of commonly supported operating parameters from the first local area network device set of supported operating parameters and the second local area network device set of supported operating parameters;

the pair of local area network devices attempting to establish a link according to the set of commonly supported operating parameters; and

when the attempt to establish the link according to the set of commonly supported operating parameters fails:

the first local area network device of the pair of local area network devices advertising a reduced first local area network device set of operating parameters;

the pair of local area network devices determining a reduced set of commonly supported operating parameters from the reduced first local area network device set of operating parameters and the second local area network device set of operating parameters;

the pair of local area network devices establishing a link according to the reduced set of commonly supported operating parameters; and

the pair of local area network devices exchanging data according to the reduced set of commonly supported operating parameters.

30. (Amended) A semiconductor component that communicates via a wired Ethernet link with a communication device supporting two or more communication rates, the semiconductor component comprising:

Ethernet transceiver circuitry that supports communication at a plurality of rates;

the Ethernet transceiver circuitry sending a first advertisement including a first indication of at least one of the plurality of rates to the communication device;

the Ethernet transceiver circuitry attempts to establish a link with the communication device at a first rate that conforms to the first advertisement, the first rate having a corresponding counterpart in the two or more communication rates of the communication device;

the Ethernet transceiver circuitry failing to establish the link with the communication device at the first rate;

the Ethernet transceiver circuitry sending a second advertisement to the communication device, wherein the second advertisement includes a second indication of at least one of the plurality of rates, the second indication differing from the first indication, the second advertisement constructed based upon the failure of the attempt to establish the link with the communication device at the first rate;

the Ethernet transceiver circuitry establishing a link with the communication device at the second rate that conforms to the second advertisement, the second rate having a corresponding counterpart in the two or more communication rates of the communication device; and

the Ethernet transceiver circuitry communicating data to the communication device via the link at the second rate.

31. The semiconductor component of claim 30, wherein the wired Ethernet link comprises Category 5 cabling.

32. (Amended) The semiconductor component of claim 30, further comprising a protocol that governs communication over the wired Ethernet link, and the protocol being based on IEEE 802.3-2000.

33. (Amended) The semiconductor component of claim 32, wherein the first advertisement and the second advertisement do not conflict with IEEE 802.3-2000.

34. The semiconductor component of claim 30, wherein the plurality of rates comprise one thousand (1000) Mbps.

35. The semiconductor component of claim 34, wherein the plurality of rates further comprise one hundred (100) Mbps.

36. The semiconductor component of claim 30, wherein the first indication identifies each of the plurality of rates.

37. The semiconductor component of claim 36, wherein the second indication does not identify the first rate.

38. The semiconductor component of claim 30, wherein the second indication does not identify those of the plurality of rates that are greater than the first rate.

39. The semiconductor component of claim 38, wherein the second indication also does not identify the first rate.

40. The semiconductor component of claim 30, wherein the first indication identifies at least a highest rate of the plurality of rates.

41. The semiconductor component of claim 40, wherein the second indication does not identify the highest rate.

42. The semiconductor component of claim 30, wherein the second rate is greater than the first rate.

43. The semiconductor component of claim 30, wherein the plurality of rates include three or more rates.

44. The semiconductor component of claim 43, wherein the first rate is greater than the second rate.

45. The semiconductor component of claim 43, wherein the second rate is greater than the first rate.

46. The semiconductor component of claim 43, wherein the first rate is a greatest rate of the plurality of rates and the second rate is less than the greatest rate of the plurality of rates.

47. The semiconductor component of claim 43, wherein the first rate is less than a greatest rate of the plurality of rates and the second rate is greater than the first rate.

48. (Amended) A semiconductor component that communicates via a wired Ethernet link with a communication device supporting two or more rates, the semiconductor component comprising:

Ethernet transceiver circuitry that supports communication at a plurality of rates;

the Ethernet transceiver circuitry producing a first indication that identifies the plurality of rates;

the Ethernet transceiver circuitry sending the first indication to the communication device via the wired Ethernet link;

the Ethernet transceiver circuitry attempts to establish a communication link at a first rate consistent with the first indication and having a corresponding counterpart in the two or more rates of the communication device;

the Ethernet transceiver circuitry failing to establish the communication link at the first rate;

the Ethernet transceiver circuitry sending a second indication to the communication, the second indication identifying at least one of the plurality of rates but not the first rate;

the Ethernet transceiver circuitry establishing a communication link with the communication device at a second rate consistent with the second indication and having a corresponding counterpart in the two or more rates of the communication device; and

the Ethernet transceiver circuitry transmitting data to the communication device at the second rate.

49. The semiconductor component of claim 48, wherein the wired Ethernet link comprises Category 5 cabling.

50. (Amended) The semiconductor component of claim 48, further comprising a protocol that governs communication over the wired Ethernet link, and the protocol being based on IEEE 802.3-2000.

51. (Amended) The semiconductor component of claim 50, wherein the operation of the semiconductor component does not conflict with IEEE 802.3-2000.

52. The semiconductor component of claim 48, wherein the plurality of rates comprise one thousand (1000) Mbps.

53. The semiconductor component of claim 52, wherein the plurality of rates further comprise one hundred (100) Mbps.

54. The semiconductor component of claim 48, wherein the second indication does not identify those of the plurality of rates that are greater than the first rate.

55. The semiconductor component of claim 54, wherein the second indication does not identify a highest rate of the plurality of rates.

56. The semiconductor component of claim 48, wherein the second rate is greater than the first rate.

57. The semiconductor component of claim 48, wherein the second rate is less than the first rate.

58. The semiconductor component of claim 48, wherein the plurality of rates include three or more rates.

59. The semiconductor component of claim 58, wherein the first rate is greater than the second rate.

60. The semiconductor component of claim 58, wherein the second rate is greater than the first rate.

61. The semiconductor component of claim 48, wherein the first rate is a greatest rate of the plurality of rates and the second rate is less than the greatest rate of the plurality of rates.

62. The semiconductor component of claim 48, wherein the first rate is less than a greatest rate of the plurality of rates and the second rate is greater than the first rate.

63. (Amended) A semiconductor component that communicates via a wired Ethernet link with a communication device supporting two or more communication rates, the semiconductor component comprising:

Ethernet transmitter circuitry that supports communication at a plurality of rates;

Ethernet receiver circuitry that supports communication at the plurality of rates;

auto negotiation circuitry that produces a first advertisement comprising a first indication of at least one of the plurality of rates;

the Ethernet transmitter circuitry sending the first advertisement to the communication device;

the Ethernet receiver circuitry receiving an indication of the two or more communication rates of the communication device;

the Ethernet transmitter circuitry and the Ethernet receiver circuitry attempting and failing to establish a communication link at a first rate that conforms to the first advertisement and the two or more communication rates of the communication device;

the auto negotiation circuitry producing a second advertisement comprising a second indication of at least one of the plurality of rates, the second indication differing from the first indication;

the Ethernet transmitter sending the second advertisement to the communication device upon a failure in establishing the communication link at the first rate;

the Ethernet transmitter circuitry and the Ethernet receiver circuitry establishing a communication link at a second rate that conforms to the second advertisement and the two or more communication rates of the communication device; and

the Ethernet transmitter circuitry and the Ethernet receiver circuitry communicating data with the communication device.

64. The semiconductor component of claim 63, wherein the wired Ethernet link comprises Category 5 cabling.

65. (Amended) The semiconductor component of claim 63, further comprising a protocol that governs communication over the wired Ethernet link, and the protocol being based on IEEE 802.3-2000.

66. (Amended) The semiconductor component of claim 65, wherein the first advertisement and the second advertisement do not conflict with IEEE 802.3-2000.

67. The semiconductor component of claim 63, wherein the plurality of rates comprise one thousand (1000) Mbps.

68. The semiconductor component of claim 67, wherein the plurality of rates further comprise one hundred (100) Mbps.

69. The semiconductor component of claim 63, wherein the first indication identifies each of the plurality of rates.

70. The semiconductor component of claim 69, wherein the second indication does not identify the first rate.

71. The semiconductor component of claim 63, wherein the second indication does not identify those of the plurality of rates that are greater than the first rate.

72. The semiconductor component of claim 71, wherein the second indication also does not identify the first rate.

73. The semiconductor component of claim 63, wherein the first indication identifies at least a highest rate of the plurality of rates.

74. The semiconductor component of claim 73, wherein the second indication does not identify the highest rate.

75. The semiconductor component of claim 63, wherein the second rate is greater than the first rate.

76. The semiconductor component of claim 63, wherein the plurality of rates include three or more rates.

77. The semiconductor component of claim 76, wherein the first rate is greater than the second rate.

78. The semiconductor component of claim 76, wherein the second rate is greater than the first rate.

79. The semiconductor component of claim 76, wherein the first rate is a greatest rate of the plurality of rates and the second rate is less than the greatest rate of the plurality of rates.

80. The semiconductor component of claim 76, wherein the first rate is less than a greatest rate of the plurality of rates and the second rate is greater than the first rate.

81. (Amended) A semiconductor component that communicates via a wired Ethernet link with a communication device supporting two or more rates, the semiconductor component comprising:

Ethernet transmitter circuitry that supports communication at a plurality of rates;

Ethernet receiver circuitry that supports communication at the plurality of rates;

auto negotiation circuitry that produces a first indication that identifies the plurality of rates;

the Ethernet transmitter circuitry sending the first indication to the communication device via the wired Ethernet link;

the Ethernet transmitter circuitry and the Ethernet receiver circuitry attempting and failing to establish a communication link with the communication device at a first rate consistent with the first indication and having a corresponding counterpart in the two or more rates of the communication device;

the auto negotiation circuitry producing and the Ethernet transmitter circuitry sending a second indication to the communication device upon a failure to establish acceptable communication at the first rate, the second indication identifying at least one of the plurality of rates but not the first rate;

the Ethernet transmitter circuitry and the Ethernet receiver circuitry establishing a communication link with the communication device at a second rate consistent with the second indication and having a corresponding counterpart in the two or more rates of the communication device; and

the Ethernet transmitter circuitry and the Ethernet receiver circuitry communicating data with the communication device.

82. The semiconductor component of claim 81, wherein the wired Ethernet link comprises Category 5 cabling.

83. (Amended) The semiconductor component of claim 81, further comprising a protocol that governs communication over the wired Ethernet link, and the protocol being based on IEEE 802.3-2000.

84. (Amended) The semiconductor component of claim 83, wherein the operation of the semiconductor component does not conflict with IEEE 802.3-2000.

85. The semiconductor component of claim 81, wherein the plurality of rates comprise one thousand (1000) Mbps.

86. The semiconductor component of claim 85, wherein the plurality of rates further comprise one hundred (100) Mbps.

87. The semiconductor component of claim 81, wherein the second indication does not identify those of the plurality of rates that are greater than the first rate.

88. The semiconductor component of claim 81, wherein the second indication does not identify a highest rate of the plurality of rates.

89. The semiconductor component of claim 81, wherein the second rate is greater than the first rate.

90. The semiconductor component of claim 81, wherein the second rate is less than the first rate.

91. The semiconductor component of claim 81, wherein the plurality of rates include three or more rates.

92. The semiconductor component of claim 91, wherein the first rate is greater than the second rate.

93. The semiconductor component of claim 91, wherein the second rate is greater than the first rate.

94. The semiconductor component of claim 81, wherein the first rate is a greatest rate of the plurality of rates and the second rate is less than the greatest rate of the plurality of rates.

95. The semiconductor component of claim 81, wherein the first rate is less than a greatest rate of the plurality of rates and the second rate is greater than the first rate.

96. (Amended) A wired Ethernet communication system comprising:

a first Ethernet communication device that supports communication at a plurality of rates;

a second Ethernet communication device coupled to the first Ethernet communication device via a wired Ethernet link and supporting two or more communication rates;

the first Ethernet communication device producing a first advertisement comprising a first indication of at least one of the plurality of rates;

the first Ethernet communication device sending the first advertisement to the second Ethernet communication device;

the first Ethernet device and the second Ethernet device attempting and failing to establish a communication link at a first rate that conforms to the first advertisement, the first rate having a corresponding counterpart in the two or more communication rates of the communication device;

the first Ethernet communication device producing a second advertisement comprising a second indication of at least one of the plurality of rates, the second indication differing from the first indication, the second advertisement constructed based upon a result of the attempt to establish a communication link at the first rate;

the first Ethernet device sending the second advertisement to the second Ethernet device upon a failure to establish acceptable communication at the first rate;

the first Ethernet device and the second Ethernet device establishing a communication link at a second rate that conforms to the second advertisement, the second rate having a corresponding counterpart in the two or more communication rates of the communication device; and

the first Ethernet device and the second Ethernet device exchanging data via the communication link at the second rate .

97. The wired Ethernet communication system of claim 96, wherein the wired Ethernet link comprises Category 5 cabling.

98. (Amended) The wired Ethernet communication system of claim 96, further comprising a protocol that governs communication over the wired Ethernet link, and the protocol being based on IEEE 802.3-2000.

99. (Amended) The wired Ethernet communication system of claim 98, wherein the first advertisement and the second advertisement do not conflict with IEEE 802.3-2000.

100. The wired Ethernet communication system of claim 96, wherein the plurality of rates comprise one thousand (1000) Mbps.

101. The wired Ethernet communication system of claim 100, wherein the plurality of rates further comprise one hundred (100) Mbps.

102. The wired Ethernet communication system of claim 96, wherein the first indication identifies each of the plurality of rates.

103. The wired Ethernet communication system of claim 102, wherein the second indication does not identify the first rate.

104. The wired Ethernet communication system of claim 96, wherein the second indication does not identify those of the plurality of rates that are greater than the first rate.

105. The wired Ethernet communication system of claim 104, wherein the second indication also does not identify the first rate.

106. The wired Ethernet communication system of claim 96, wherein the first indication identifies at least a highest rate of the plurality of rates.

107. The wired Ethernet communication system of claim 106, wherein the second indication does not identify the highest rate.

108. The wired Ethernet communication system of claim 96, wherein the first rate is greater than the second rate.

109. The wired Ethernet communication system of claim 96, wherein the plurality of rates include three or more rates.

110. The wired Ethernet communication system of claim 109, wherein the first rate is greater than the second rate.

111. The wired Ethernet communication system of claim 109, wherein the second rate is greater than the first rate.

112. The wired Ethernet communication system of claim 109, wherein the first rate is a greatest rate of the plurality of rates and the second rate is less than the greatest rate of the plurality of rates.

113. The wired Ethernet communication system of claim 109, wherein the first rate is less than a greatest rate of the plurality of rates and the second rate is greater than the first rate.

114. (Amended) A wired Ethernet communication system comprising:

a first Ethernet communication device that supports communication at a plurality of rates;

a second Ethernet communication device coupled to the first Ethernet communication device via a wired Ethernet link and supporting two or more communication rates;

the first Ethernet communication device producing a first indication that identifies the plurality of rates;

the first Ethernet communication device sending the first indication to the second communication device via the wired Ethernet link;

the first Ethernet communication device and the second Ethernet communication device attempting and failing to establish a communication link at a first rate consistent with the first indication and having a corresponding counterpart in the two or more rates of the communication device;

the first Ethernet communication device producing and sending a second indication to the second Ethernet communication device upon a failure to establish acceptable communication at the first rate, the second indication identifying at least one of the plurality of rates but not the first rate;

the first Ethernet communication device and the second Ethernet communication device establishing a communication link at a second rate consistent with the second indication and having a corresponding counterpart in the two or more rates of the communication device; and

the first Ethernet communication device and the second Ethernet communication device exchanging data on the established communication link at the second rate.

115. The wired Ethernet communication system of claim 114, wherein the wired Ethernet link comprises Category 5 cabling.

116. (Amended) The wired Ethernet communication system of claim 114, further comprising a protocol that governs communication over the wired Ethernet link, and the protocol being based on IEEE 802.3-2000.

117. (Amended) The wired Ethernet communication system of claim 116, wherein the operation of the wired Ethernet communication system does not conflict with IEEE 802.3-2000.

118. The wired Ethernet communication system of claim 114, wherein the plurality of rates comprise one thousand (1000) Mbps.

119. The wired Ethernet communication system of claim 118, wherein the plurality of rates further comprise one hundred (100) Mbps.

120. The wired Ethernet communication system of claim 114, wherein the second indication does not identify those of the plurality of rates that are greater than the first rate.

121. The wired Ethernet communication system of claim 120, wherein the second indication does not identify a highest rate of the plurality of rates.

122. The wired Ethernet communication system of claim 114, wherein the second rate is greater than the first rate.

123. The wired Ethernet communication system of claim 114, wherein the second rate is less than the first rate.

124. The wired Ethernet communication system of claim 114, wherein the plurality of rates include three or more rates.

125. The wired Ethernet communication system of claim 124, wherein the first rate is greater than the second rate.

126. The wired Ethernet communication system of claim 124, wherein the second rate is greater than the first rate.

127. The wired Ethernet communication system of claim 114, wherein the first rate is a greatest rate of the plurality of rates and the second rate is less than the greatest rate of the plurality of rates.

128. The wired Ethernet communication system of claim 114, wherein the first rate is less than a greatest rate of the plurality of rates and the second rate is greater than the first rate.

129. A method for servicing communications between a first wired Ethernet device and a second wired Ethernet device that couple via a wired link, the method comprising:

the first wired Ethernet device auto negotiating with the second wired Ethernet device to determine that link establishment will be attempted at the first supported link speed;

the first wired Ethernet device and the second wired Ethernet device failing to establish a link at the first supported link speed;

the first wired Ethernet device auto negotiating with the second wired Ethernet device to determine that link establishment will be attempted at the second supported link speed;

the first wired Ethernet device and the second wired Ethernet device establishing a link at the second supported link speed; and

the first wired Ethernet device and the second wired Ethernet device exchanging data at the second supported link speed.

130. The method of claim 129, wherein:

the first supported link speed is one thousand (1000) Mbps; and

the second supported link speed is one hundred (100) Mbps.

131. The method of claim 129, wherein:

the first supported link speed is one hundred (100) Mbps; and

the second supported link speed is ten (10) Mbps.

132. A semiconductor component that communicates via a wired Ethernet link with a communication device, the semiconductor component comprising:

Ethernet transmitter circuitry;

Ethernet receiver circuitry;

auto negotiation circuitry operably coupled to the Ethernet transmitter circuitry and to the Ethernet receiver circuitry, wherein the auto negotiation circuitry generates a first advertisement that includes a first supported link speed and a second supported link speed, wherein the first supported link speed exceeds the second supported link speed;

the Ethernet transmitter circuitry sending the first advertisement to the communication device via the wired Ethernet link;

the Ethernet transmitter circuitry and the Ethernet receiver circuitry attempting and failing to establish a communication link with the communication device at the first supported link speed;

the auto negotiation circuitry generating a second advertisement that includes the second supported link speed but not the first supported link speed;

the Ethernet transmitter circuitry sending the second advertisement to the communication device via the wired Ethernet link;

the Ethernet transmitter circuitry and the Ethernet receiver circuitry establishing a communication link with the communication device at the second supported link speed; and

the Ethernet transmitter circuitry and the Ethernet receiver circuitry communicating data with the communication device at the second supported link speed.

133. The semiconductor component of claim 132, wherein:
the first supported link speed is one thousand (1000) Mbps; and
the second supported link speed is one hundred (100) Mbps.

134. The semiconductor component of claim 132, wherein:
the first supported link speed is one hundred (100) Mbps; and
the second supported link speed is ten (10) Mbps.

135. A method for servicing communications between a first wired Ethernet device and a second wired Ethernet device that couple via a wired link, the method comprising:

the first wired Ethernet device negotiating with the second wired Ethernet device to determine that link establishment will be attempted at the first supported link speed;

the first wired Ethernet device and the second wired Ethernet device failing to establish a link at the first supported link speed;

the first wired Ethernet device negotiating with the second wired Ethernet device to determine that link establishment will be attempted at the second supported link speed;

the first wired Ethernet device and the second wired Ethernet device establishing a link at the second supported link speed;

the first wired Ethernet device and the second wired Ethernet device exchanging data at the second supported link speed; and

in response to a failure of the link at the second supported link speed:

the first wired Ethernet device negotiating with the second wired Ethernet device to determine that link establishment will be attempted at the first supported link speed; and

the first wired Ethernet device and the second wired Ethernet device attempting to establish a link at the first supported link speed.

136. The method of claim 135, wherein:
the first supported link speed is one thousand (1000) Mbps; and
the second supported link speed is one hundred (100) Mbps.

137. The method of claim 135, wherein:

the first supported link speed is one hundred (100) Mbps; and

the second supported link speed is ten (10) Mbps.

138. A semiconductor component that communicates via a wired Ethernet link with a communication device, the semiconductor component comprising:

Ethernet transmitter circuitry;

Ethernet receiver circuitry;

auto negotiation circuitry operably coupled to the Ethernet transmitter circuitry and to the Ethernet receiver circuitry, wherein the auto negotiation circuitry generates a first advertisement that includes a first supported link speed and a second supported link speed, wherein the first supported link speed exceeds the second supported link speed;

the Ethernet transmitter circuitry sending the first advertisement to the communication device via the wired Ethernet link;

the Ethernet transmitter circuitry and the Ethernet receiver circuitry attempting and failing to establish a communication link with the communication device at the first supported link speed;

the auto negotiation circuitry generating a second advertisement that includes the second supported link speed but not the first supported link speed;

the Ethernet transmitter circuitry sending the second advertisement to the communication device via the wired Ethernet link;

the Ethernet transmitter circuitry and the Ethernet receiver circuitry establishing a communication link with the communication device at the second supported link speed; and

in response to a failure of the communication link with the communication device at the second supported link speed:

the Ethernet transmitter circuitry sending the first advertisement to the communication device via the wired Ethernet link; and

the Ethernet transmitter circuitry and the Ethernet receiver circuitry attempting to establish a communication link with the communication device at the first supported link speed.

139. The semiconductor component of claim 138, wherein:
the first supported link speed is one thousand (1000) Mbps; and
the second supported link speed is one hundred (100) Mbps.

140. The semiconductor component of claim 138, wherein:
the first supported link speed is one hundred (100) Mbps; and
the second supported link speed is ten (10) Mbps.